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NEW NORTH AMERICAN BEES.

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Halictus sopinci, new species.

Female.—Length 8.5 mm. Black, shiny, thinly clothed with short whitish hair; head and thorax very finely and delicately lineolate, more distinct and rougher on middle of face, less so on clypeus; a spot on each side of clypeus and vertex not lineolate; face with fine scattered punctures, those of clypeus coarser; facial quadrangle subquadrate; clypeus well produced and almost one-half as long as width between bases of mandibles; third joint of antennae distinctly shorter than fourth; mesonotum sparsely, finely punctured, scutellum smoother and more shiny, the punctures more scattered; propodeum with fine rugae not reaching apex, the apical portion finely reticulately lineolate; truncation of propodeum surrounded by a delicate carina, which is distinct at upper middle so that the base of propodeum is distinctly, sharply truncate; truncation with vertical striae curving outwardly; tegulae dark, with a reddish testaceous center and margin; wings slightly dusky, more so apically; stigma brown, veins lighter; scopa light ochraceous, plumose behind; basal joint of hind tarsi very much narrower than tibia, hind inner spur with a few long teeth; abdomen almost impunctate, finely lineolate, apical margins of segments reddish, segments 2-4 with basal patches of appressed white pubescence.

One specimen from Southern Pines, N. C., Mar. 26, 1923, A. H. Manee, coll.

In my key to *Halictus*, in Journ. N. Y. Ent. Soc. XV, 183, 1907, this would run to couplet 35 and fits neither alternate completely, as the rugae of propodeum are much too fine for the *pectoralis* group and the truncate propodeum does not fit the *quadrimaculatus* group.

There is no enclosure on propodeum as in *pectoralis*. In general appearance, *sopinci* resembles *truncatus*, rather the species to which it runs in the key, but it differs as widely in structure of propodeum from the *truncatus* group.

Halictus ralenci, new species.

Female.—Length 7.5 mm. Black, shiny, slender; thinly clothed with short griseous pubescence; head and thorax finely reticulately lineolate, but vertex,

¹The work reported in this paper was done by Mr. Crawford while in the employ of the North Carolina Department of Agriculture. (Ed.)

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clypeus and sides of face below almost smooth; post-vertex transversely striate; facial quadrangle subquadrate, not narrowed below; face above antennae closely punctured, below sparsely so, clypeus with only scattered punctures; clypeus hardly one third as long as width between bases of mandibles; third joint of antennae as long as fourth; mesonotum rather sparsely and finely punctate, punctures of scutellum, except two discal spots, as close; propodeum with few quite regular rugae, reaching apex, and medially at apex an indistinct carina of basal enclosure; truncation with a cordate carina, indistinct only medially above; tegulae dark, with a testaceous outer margin; wings slightly dusky; stigma brown, veins lighter; legs brown, scopa thinly plumose, basal joint of hind tarsi slender; hind inner spur with five long teeth, the three intermediate ones flattened, plate-like; abdomen smooth, with scattered minute punctures, apical margins of segments testaceous; basal hair patches of segments small and indistinct.

One specimen Raleigh, N. C., May 29, 1924, C. S. Brimley.

The scopa of this specimen contains a few grains of *Oenothera* pollen grains.

This species runs in the key as does the former but is as readily separated from the species as is *sopinci*.

Halictus brycinci, new species.

Female.—Length 5 mm. Head and thorax olive-green, abdomen dark brown, with a faint greenish reflection, apical margins of segments testaceous; head and thorax thinly clothed with long ochraceous pubescence; facial quadrangle slightly longer than wide, clypeus produced; face strongly reticulately lineolate, with crowded punctures above antennae, below punctures sparse, coarser on clypeus; mesonotum strongly reticulated, with close quite coarse punctures; propodeum with few longitudinal, somewhat irregular, rugae, not quite reaching apex which is coarsely lineolated; lateral rugae extending onto pleurae; truncation with carina not reaching to upper lateral angles; tegulae reddish, darker inwardly; wings yellowish, stigma and veins honey color; mesopleurae reticulated and with rather close punctures; legs brownish-black with white pubescence; abdomen delicately reticulated, first segment with scattered minute punctures, those of second segment closer and more distinct; sides of first and second segments and whole surface of following segments with thin white appressed pubescence.

Type.—Cat. No. 40304, U. S. N. M.

Type locality.—Bryson City, N. C.

Type and one paratype, Apr. 14, on *Fragaria virginiana*; on the same flower, one each on Apr. 15 and 22; one Apr., 14 on *Potentilla canadensis*, all collected in 1923 by the author.

A species somewhat resembling *albipennis*, from which it differs by the more slender form, broader face more deeply colored pubescence and wings, carina of truncation of propodeum not extending above lateral angles, etc.

Halictus abanci, new species.

Female.—Length 7 mm. Form slender, abdomen noticeably pointed at apex, head and thorax very dark green, with scanty ochraceous pubescence; abdomen purplish black with only scattered ochraceous hairs; facial quadrangle slightly longer than wide, clypeus well produced; head and thorax conspicuously reticulately lineolate, apical half of clypeus and a spot on each side of clypeus smooth; face in front of ocelli with crowded punctures, below this and sides of face with sparse punctures becoming scattered on clypeus and supraclypeal area; mesonotum with sparse fine punctures, those at rear varying in size, which is especially so on scutellum; propodeum with weak irregular longitudinal rugae not reaching apex which is conspicuously reticulated; median ruga stronger, straighter and usually reaching almost to apex; mesopleurae finely rugulose and with scattered punctures; sides of propodeum and truncation reticulated, surrounding carina not reaching to upper lateral angles; tegulae dark; wings deeply infuscated stigma and veins brown; legs dark, with ochraceous pubescence; abdomen delicately and reticulately lineolated, first segment one with a few scattered minutely punctures, second segment with a few more punctures basally, apical part impunctate.

Type.—Cat. No. 40305, U. S. N. M.

Type.—From Andrews Bald Mountain (6,000 ft.), Swain Co., N. C., July 26, 1923, J. C. Crawford, coll.

One specimen from mouth of Bear Creek, Swain Co., N. C., July 27, 1923 (Crawford coll.); Highlands, N. C. July 14, 1923 and September 5, 1920, T. B. Mitchell, coll.

Easily recognized among the eastern species by the deeply colored wings, resembles *nigroviridis* Graenicher, which has the wings somewhat lighter, the carina of truncation of propodeum reaching above lateral angles, form more robust and abdomen more bluntly pointed at apex, clypeus less produced, facial quadrangle broader than long, etc.

Halictus brimleyi, new species.

Female.—Length 7.5 mm. Head and thorax dark olive-green, pleurae more bluish, the head and propodeum often somewhat bluish-green; facial quadrangle about square, narrowed below; clypeus hardly produced, sparsely punctured, mostly purplish-black; face below antennae sparsely punctured, opposite antennae reticulately rugose, above antennae the punctures becoming larger and closer; above ocelli wrinkled; mandibles reddish near apex; antennae dark brown, flagel obscurely reddish beneath; head and thorax with long ochraceous pubescence, abundant and very plumose on propodeum, except enclosure; mesoscutum reticulately rugose anteriorly, especially at sides, along median groove often wrinkled, with interspersed punctures; posterior part of mesoscutum with coarse, close punctures; base of scutel with fine close punctures, posteriorly with coarser and sparser punctures, disk with two impunctate spots; metanotum rugose; truncation of propodeum reticulately rugose, surrounded by a strong salient rim; dorsum of propodeum with wavy longitudinal rugae, base with a distinct enclosure bounded by a strong carina, which is more salient medially;

pleurae reticulately rugose, in part striately rugose, especially on anterior part of propodeum; legs dark brown, mid and hind tarsi often reddish; scopa golden-ochraceous; front trochanters flattened in front, hardly narrowed towards base, so that at base exteriorly there is a distinct angular corner; viewed laterally, the front surface of fore trochanters is concave with the depression running to the basal exterior angle; tegulae brownish, exteriorly testaceous; wings brownish, stigma and veins honey color, subcosta darker; abdomen dark brown, segments one and two distinctly though minutely punctured; second segment with basal hair patches of appressed whitish pubescence; segments three and four mostly covered with similar hair, interspersed with abundant long ochraceous hairs; fifth segment without appressed hair but having abundant long golden hair.

Type from Bryson City, N. C., with the following data: Crawford number 5505, on *Ilex opaca*, May 24, 1923, J. C. Crawford, collector.

Other specimens from the type locality taken in 1923 as follows: May 24, on *Senecio balsamitae* (one specimen); July 8 (three specimens) and 9 (one specimen), on flowers of *Canna*; July 9, on flowers of *Gladiolus* (six specimens); July 9 on *Nicanandra physalodes* (one), July 9 on *Mirabilis jalapa* (one); one small specimen only about 5.5 mm. with the same data as the type specimen (all collected by the author).

Named in honor of Mr. C. S. Brimley who has added so much to our knowledge of the North Carolina insects and who was my companion on the trip on which the type specimen was collected.

Type.—Cat. No. 40306 U. S. N. M.

The following species have the propodeum surrounded by a pronounced salient carina: *nymphaearum* Robt. and *oceanicus* Ckll., with punctured tegulae; *cressonii* Robt. which is without reticulations on the mesoscutum; *reticulatus* Robt., *hartii* Robt., *rugosus* Cwfd., and *bruneri* Cwfd.

Of these *reticulatus* and *bruneri* have similarly flattened front trochanters; *rugosus* does not (nor does *cressonii*); *hartii*, unknown to me, is described as having the head green and thorax blue and the abdomen without hair patches. *H. reticulatus* has a dark blue head and thorax; *bruneri* is smaller, with light colored legs, base of propodeum without a distinct enclosure and with finer rugae, and with rugae of truncation of propodeum diverging from point of insertion of abdomen.

***Halictus hunteri*, new species.**

Female.—Length 5 mm. Head and thorax green, abdomen red; tegulae testaceous, large, punctured all over, pointed behind; apex of clypeus purplish-black; head and thorax closely, coarsely punctured (about as in *pictus*), reticulately lineolated, somewhat shiny; antennae red beneath; punctures of scutellum finer and closer (except two discal spots) than on mesoscutum;

propodeum with irregular rugae not reaching apex, those laterad straighter and extending over onto pleurae; truncation with a delicate surrounding carina interrupted only medially above; wings yellowish, stigma and veins honey color; legs reddish-brown; abdomen finely transversely lineolate, with scattered minute punctures.

Described from six specimens from the collection of the U. S. National Museum as follows: four specimens from Victoria, Texas, collected Febr. 26, 1904, Apr. 7, 1904, J. C. Crawford, collector; Apr. 17, 1904, A. W. Morrill, collector; one from Runge, Tex., Sept. 29, 1904, J. C. Crawford, coll.; one from Edna, Tex., Mar. 24, 1907, J. D. Mitchell, coll.

Type.—Cat. No. 40307 U. S. N. M.

Distinguished from the other species with red abdomen by the large and punctate tegulae; only *nymphalis* and *pictus* (which also occurs at Victoria, Tex.), of the eastern species with the abdomen red have coarsely (for this group) punctured mesonotum.

Dedicated to the late Dr. W. D. Hunter.

***Halictus raleighensis*, new species.**

Female.—Length 5 mm. Very similar to *ashmeadi*, having the same long narrow face and strongly lineolated surface of head and thorax but differ in having punctures of mesoscutum evenly spaced over whole surface, and about a puncture width apart, while in *ashmeadi* they are very close laterally, becoming more sparse centrally so that medially and especially anteriorly the surface is almost impunctate; first and second abdominal segments closely, strongly punctate; in *ashmeadi* impunctate or at most with very minute, scattered, shallow and almost invisible punctures; carinae on sides of posterior face of propodeum not reaching to upper lateral angles, in *ashmeadi* they reach angles and turn inward but do not meet.

Described from one specimen with the following data: Raleigh, N. C., June 5, 1923, on *Baptisia tinctoria*, T. B. Mitchell, collector.

The following key will aid in the separation of the species allied to *ashmeadi* and *floridanus*:

- 1. Veins and stigma light color.....2
- Veins and stigma dark brown.....3
- 2. Wings whitish, third cubital cell subobsolete; mesonotum finely sparsely punctured 4-5 mm. (Florida; N. C.).....*longiceps* Robt.
- Wings dusky; third cubital cell not subobsolete; mesonotum closely and more coarsely punctured, 6-7 mm. (Florida; N. C.).....
floridanus Robt.

3. Abdominal segments one and two closely punctured (N. C.)... .. =
raleighensis Cwfd.

Abdominal segments one and two not visibly punctured (Florida; N. C.)
ashmeadi Robt.

***Epeolus ainsliei*, new species.**

Female.—Length 8 mm. Black, compact, with the following parts red: mandibles, except apices, labrum, clypeus anteriorly, scape and basal joints of flagellum beneath, tubercles, tegulae, lateral anterior corners of mesoscutum, pleurae largely, scutellum and axillary teeth, legs, except anterior and mid coxae, fifth abdominal segment apically, sixth, and most of ventral segments; in some paratypes mesoscutum laterally, pronotum, clypeus almost entirely, fore and mid coxa and abdominal sternites entirely, red; face closely and finely punctured, front with coarser and sparser punctures; punctures of mesoscutum close, in size similar to those of front; punctures of pleurae separated by slightly less than a puncture width, becoming sparser below and on sternum; pubescence as follows, white: face well covered, with that on front sparser and slightly yellowish, margins of mesoscutum and two lines on anterior margin, posterior margin of scutellum, metonotum, propodeum, except triangle, mesopleurae, posterior coxae, band on base of abdominal segment one, apices of segments one to four and lateral spots on five; bands on apices of segments one and two narrowed medially; all bands somewhat widened laterally; axillary teeth somewhat longer than dorsal face of scutellum, slightly incurved; hind tibial spurs black; abdomen closely, rather finely punctured.

Type.—Cat. No. 40308 U. S. N. M.

Type locality.—Sioux City, Iowa.

Type and 2 paratypes, July 15, 1922, one each: July 8, July 9, 1921, and July 20, 1920. All collected by Mr. C. N. Ainslie, after whom the species is named.

A species greatly resembling *pusillus* Cresson but differing in the greater amount of red and in the much more sparsely punctured pleurae and sternum.

Of the species with sparsely punctured pleurae and sternum *lectus* and *lectoides* have black legs and sparsely, coarsely punctured mesonotum; *interruptions* has the abdominal bands interrupted and the inner ends dilated, and the axillary spines distinctly shorter than scutellum.

***Perdita ainsliei*, new species.**

Male.—Length 4 mm. Head and thorax green, abdomen apricot color, apical margins of segments lighter, and preapically more brownish; pubescence scanty, long, white; head broader than thorax, well produced behind eyes, facial quad-angle broader than long (22:17); mandibles, except tips, labrum, clypeus and lateral face marks, which are broadly truncate above just below antennal sockets, ivory white; head and thorax finely granular and with scattered minute punctures; clypeus and lateral face marks smooth and shiny; scape dark, flagellum light reddish slightly darker above; tegulae hyaline, tubercles ivory

white; wings subhyaline, veins light testaceous, stigma and subcosta brown; stigma narrow, about four-fifths length of marginal cell; first recurrent received by second cubital cell about one-sixth from base, second recurrent sub-interstitial; femora brown, lighter above, tibiae lighter, tarsi testaceous; anterior tibiae with a yellowish ivory stripe in front; knees, bases and apices of tibiae lighter; pubescence at apex of abdomen golden.

Female.—Length 5 mm. Similar to male, antennae darker; clypeus and supra-clypeal area bronzy-black, clypeus with an irregular whitish mark on disk; lateral face marks more obliquely truncate; head somewhat less produced behind eyes, hardly broader than thorax; facial quadrangle broader than long, inner orbits sub-parallel; tubercles ivory; legs brown, knees ivory; preapical brown of abdominal segments more distinct and forming bands.

Type.—Cat. No. 40309 U. S. N. M.

Type locality.—Sioux City, Iowa.

Type, allotype and 3 male and 3 female paratypes July 4, 1925; 1 female, July 2, 1925; one female, July 22, 1924; one male July 17, 1926; 2 males, July 22, 1926; 4 females and 3 males, July 26, 1924; 2 females, no date.

All collected by Mr. C. N. Ainslie, after whom the species is named.

Perdita gerardiae, new species.

Male.—Length 7 mm. Head and thorax green, rather thinly clothed with long white pubescence; head finely shagreened and with scattered fine punctures; mandibles, labrum, clypeus (except occasionally extreme upper edge) except two discal dots, and lateral face marks truncate above, extending to upper edge of clypeus, creamy-white; inner orbits subparallel; facial quadrangle one-third longer than side; thorax with sculpture similar to that of head; wings dusky, more so apically; nervures brown, with center of stigma testaceous; tegulae dark anteriorly, with a testaceous center and lighter apically; legs dark, tarsi reddish; knees and stripes on front of fore femora apically, and fore and mid tibiae, very light yellowish; abdomen satiny black with a short transverse creamy line on each side of segments 2 and 3; those on segment 3 shorter and sometimes absent; segment 7 reddish testaceous.

Female.—Length 8 mm. Similar to male but labrum dark; mark on clypeus not extending to upper margin, but with a median upper extension; lateral face marks almost triangular, the upper margin very oblique; light markings on legs confined to small spots on fore and mid knees and stripe on fore tibiae; pygidial area reddish.

Type locality.—Southern Pines, N. C.

Type.—Cat. No. 40310 U. S. N. M.

One female and 7 males from flowers of a purple *Gerardia*, Sept. 26, 1923. T. B. Mitchell, coll.

Also Gliden, Chowan Co., N. C.; five females and four males, from *Gerardia fasciculata* Sept. 19, 1923, T. B. Mitchell;

McCullers, N. C., Sept. 14, 1923, on *Gerardia*, one female, T. B. Mitchell.

PSEUDOPANURGUS ROBERTSON.

The characters given by Robertson for his genus *Heterosarus* are the simple scopa of the female and the lateral face marks in the male not reaching to the upper margin of the clypeus. Of the 5 Eastern species known to me in which the female has a simple scopa, the males of only 2 are as generically characterized. *P. illinoiensis* Cress. has the lateral marks somewhat obliquely truncate just at upper margin of clypeus, with the end touching inner orbit, a little higher; in the 2 species described below the marks extend above clypeus.

P. virginicus, *pauper* and the 2 new species herein described from a close group of species which are closely and minutely punctured and silky from fine lineolation. So fine and close are the punctures of the apical margins of the abdominal segments of the new species, that, when resolved under a high power of the binocular microscope they appear as minute thimble-like punctures.

The following key will distinguish the species discussed.

MALES

1. With abundant long erect pubescence..... *illinoiensis* Cress.
Pubescence sparse, short, recumbent..... 2
2. Face subquadrate, inner orbits subparallel..... *virginicus* Ckll.
Inner orbits converging below..... 3
3. Lateral face marks not extending to upper margin of clypeus, truncate above..... *pauper* Cress.
Lateral face marks extending above clypeus, pointed on inner orbits..... 4
4. First and second cubital cells subequal (first at times shorter); first recurrent further from base of second cubital than first intercubital is from stigma; first abscissa of radius distinctly shorter than second..... *gerardiae* n. sp.
First cubital about one-fifth longer than second; first recurrent nearer base of second cubital than first intercubital is to stigma; first and second abscissae of radius subequal..... *stevensi* n. sp.

FEMALES

1. With abundant long erect pubescence on head and thorax..... *illinoiensis* Cress.
Pubescence short, sparse, recumbent..... 2
2. Face not narrowed below..... *virginicus* Ckll.
Inner orbits converging below..... 3
3. First abdominal segment rather closely minutely punctured; second with scattered punctures and strongly reticulately lineolate; third not punctured, lincolate..... *pauper* Cress.
Abdominal segments 1-3 closely, minutely punctured..... 4

4. First and second cubital cells subequal; first recurrent further from base of second cubital than first intercubitus is from stigma.....
gerardiae n. sp.
 First cubital one-fifth longer than second; first recurrent at most as far from base of second cubital as first intercubitus is from stigma
stevensi n. sp.

***Pseudopanurgus pauper* (Cresson).**

Calliopsis pauper Cress.

Calliopsis parvus Robt.

Heterosarus parvus Robt.

A homotype of *P. pauper* in the U. S. N. M. has been compared with specimens of *parvus* determined by Robertson and they are identical. In the female the supraclypeal area and base of clypeus are smooth and shiny, hardly lineolate; foveae long usually ending about on the level of a line touching lower margin of antennal sockets; first cubital cell distinctly longer than second; first recurrent about as far from base of second cubital as length of first abscissa of radius; face marks of male ivory color, punctures of scutellum fine, well separated; abdomen punctured as in female.

***Pseudopanurgus virginicus* (Cockerell).**

Raleigh, N. C., May 18, 1926, C. S. Brimley; Bryson City, N. C., June 2, 1923, on *Houstonia purpurea*, J. C. Crawford. These records, the first for this State, considerably extend the known range of the species.

***Pseudopanurgus gerardiae*, new species.**

Male.—Length 4.5 mm. Very similar in general appearance to *pauper*; base of mandibles, labrum, clypeus, triangular lateral face marks, attenuated above and ending on inner orbits above upper margin of clypeus, light lemon yellow; process of labrum slightly narrowed apically; sculpture of head and thorax about as in *pauper* but ocellar triangle and caudad and laterad of it more closely punctate; punctures of mesonotum slightly coarser, of scutellum slightly closer; tegulae with a large dark spot inwardly; legs marked as *pauper* but yellow stripe on anterior tibiae narrow and not extending onto posterior face; punctures of abdomen though very fine, distinct and close even on depressed apical margins of segments.

Female.—Length 5 mm. Similar to the male and close to the female of *pauper*, differing as indicated in the key; foveae ending about on a line touching upper margins of antennal sockets; supraclypeal area and base of clypeus dull from lineolation; tegulae dark brownish black inwardly.

Type.—Cat. No. 40311 U. S. N. M.

Type locality.—Bryson City, N. C.

Described from 11 males and 7 females taken by the author Aug. 26, 27 and Sept. 7, 1923, on *Gerardia tenuifolia*.

Pseudopanurgus stevensi, new species.

Male.—Length 5.5 mm. Similar to the two preceding species but distinct as indicated; in face marks slightly more yellowish than in *gerardiae*; lateral face marks appearing less attenuated above, since they extend higher up on eye; clypeus with basal margin distinctly wider than *gerardiae*; process of labrum only slightly narrowed apically; sculpture about as in *gerardiae*.

Female.—Length 6 mm. Similar to the male, distinguished as in the key; supraclypeal area and base of clypeus dull from lineolation; foveae as in *gerardiae* tegulae larger than in *gerardiae* and inwardly reddish-testaceous; abdominal segments less closely punctured, less distinctly lineolate and more shiny than *gerardiae*.

Type.—Cat. No. 40312 U. S. N. M.

Described from 3 pairs from Lucca, N. D., July 16, 1913, on *Lactuca pulchella*; from same locality and date one female on *Ratibida columnaris*; Kenmare, N. D., July 15, 1913, on *Carduus undulatus*, four females; Nicholson, N. D., July 4, 1913, on *Brassica arvensis*, one female; Valley City, N. D., July 26, 1913, on *Carduus undulatus*, two females. All collected by O. A. Stevens.

Panurginus rohweri, new name.

Panurginus bakeri Crawford, Proc. Ent. Soc. Wash., vol. 28, no. 9, Dec., 1926, pp. 209, 213—Not (*Calliopsis*) *Panurginus bakeri* Cockerell, Trans. Amer. Ent. Soc., vol. 32, 1906, p. 299.

NOTES ON HELMIDAE (COLEOPTERA) TAKEN IN THE
TENNESSEE GREAT SMOKY MOUNTAINS, WITH
DESCRIPTION OF A NEW SPECIES.

By PAUL N. MUSGRAVE, *Fairmont, W. Va.*

Intensive collecting in the Little Pigeon River and a few of its tributaries from June 9–14, 1931, produced a large number of specimens of four species, one of which is new.

Stenelmis crenata Say was regularly taken with a hand screen in the main stream wherever sand was found in any noticeable quantities. Its range apparently did not extend into the colder tributaries.

Limnius ovalis Lec. was occasionally found with *S. crenata* Say but it appeared in great abundance in the colder streams flowing through clearings.

Limnius cryophilus n. sp. seemed to like the spring-fed, rapid flowing rills which raced through dark laurel thickets. Disturbing the moss-covered stones in such a stream usually